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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,499	04/17/2006	Matti Ravaska	18901	4209
67844 7590 10/01/2009 ARIZONA CHEMICAL COMPANY c/o Bo Segers P.O. Box 550850 Jacksonville, FL 32255			EXAMINER CALANDRA, ANTHONY J	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 10/01/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,499

Applicant(s)

RAVASKA, MATTI

Examiner

ANTHONY J. CALANDRA

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Office Action

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/30/2009 has been entered.

Claims 1 and 20 have been amended. Claims 11 and 12 were amended, however, this change was not shown and there was not a proper claim identifier. Claim 21 was not included in the claims and appears to be canceled. Claims 1-20 are currently pending.

Response to Arguments

1. Applicant's arguments filed 7/30/2009 have been fully considered but they are not persuasive.

Applicant amended the claims to state that the tall oil is a blended mixture of fatty acid component and a rosin acid component. Applicant argues all of the remainder of the claims on the basis of representative claim 1, and the 'blended mixture' limitation.

In the claims dated 11/04/2008 the applicant used the term blended which the examiner construed to be synonymous with the word 'mixed'. In the instant claim the applicant used the term 'blended mixture'. The examiner has construed this as a mixed mixture. The applicant does not give any special meaning to the word 'blended' in the specification and in fact only uses

the words mix or mixing. Therefore the examiner cannot give any definition to the term blended other than mixed without causing 112 1st new matter issues since the applicant does not have support for a special meaning for the term.

MAGEE clearly states that the distilled tall oils are mixed 'Other distillation cuts of *mixed* rosin and fatty acids [pg. 321 paragraph 1].'

MAGEE teaches that the composition is a *distilled tall oil* and the applicant refers to the fractions of fatty acids being so near each other that they cannot separate [specification pg. 8 lines 10-15] therefore distilled tall oils can be considered mixed.

The term 'blended' still described a process that has occurred. Therefore the instant product claims are still product by process claims. The process of making said product, in the instant case, by being blended, is not consequential unless the process of making said product imparts special properties to said product. A rejection under 25 USC 102/103 is proper in these cases [see e.g. MPEP 2113 Product-by-Process Claims].

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art

products and make physical comparisons therewith. " In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Further examiner notes that when a structure (composition) of a prior art is found to be substantially similar to the claims any claimed properties are presumed to be inherent [see e.g. MPEP 2112.01 (I)-(II)].

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 12 both recite the limitation "monomer part". There is insufficient antecedent basis for this limitation in the claims.

Claims 11 and 12 should depend from claim 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-9, 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Composition of American Distilled Tall Oils* by MAGEE et al, henceforth referred to as MAGEE.

As for claim 1, the use of a mixture of fatty acids and rosin acids forming a cooking aid for removing extractives from pulp is an intended use. MAGEE et al. teaches a distilled tall oil which is a mixture of fatty acids and resin acids (resin acids are rosin acids) and which have less than 5% unsaponifiables (*A wood cooking aid comprising a fatty acid component and a rosin acid component and/or salts thereof wherein said fatty acid component is blended together*

with said rosin acid component to produce said cooking aid, and wherein said cooking aid comprises about 70 to about 2% fatty acids, and about 20 to about 98% rosin acids [see e.g.

Table 1 Tall oil sample Hxs has 29% fatty acids, 67% Resin acids and 4.1% neutrals which are unsaponifiables]). The mixture of fatty acids and rosin acids falls within the instant claimed range. The process of making said product, in the instant case, by blending, is not consequential unless the process of making said product imparts special properties to said product. A rejection under 35 USC 102/103 is proper in these cases [see e.g. MPEP 2113 Product-by-Process Claims].

As for claim 2, tall oil sample Hxs of MAGEE et al. teaches a neutrals content of less than 5% which anticipates the preferred instant claim [see e.g. table 1].

As for claim 3, tall oil sample Hxs of MAGEE et al. teaches 29% fatty acids, 67% Resin acids which falls within the instant claimed range [see e.g. table 2].

As for claim 4, the tall oil sample Hxs of MAGEE et al. has resin acids including oil rosin acids, including abietic acid, dehydroabietic acid and palustic acid [see e.g. table 3 sample Hxs].

As for claim 5, the tall oil sample Hxs of MAGEE et al. has pimaric acid and 8-15-pimaradienic acid [see e.g. table 3 sample Hxs]. Examiner has interpreted 8-15-pimaradienic acid to be equivalent to 8-15 pimaric acid.

As for claim 6, the fatty acids of MAGEE et al. are produced from tall oil [see e.g. abstract and 1st paragraph]. Tall oil is produced from trees which are vegetable matter.

As for claim 7, MAGEE et al. teaches that the tall oils contain oleic acid which is an unsaturated fatty acid [see e.g. Table 2].

As for claim 8, MAGEE et al. teaches that the tall oils contain oleic acid, linoleic acid and 18:3 fatty acid [see e.g. Table 2, 18:3 fatty acid is pinoleic acid]

As for claim 9, MAGEE et al. discloses, a conjugated fatty acid 18:2 (9,11 ct), and a cyclic fatty acid, pimaric acid [see e.g. Table 2, since the double bonds of the 18:2 fatty acid alternate carbons, it is a conjugated fatty acid].

As for claims 13 and 14, MAGEE et al. discloses multiple mixtures of distilled tall oils which contain fractions of fatty acids and rosin acids [see e.g. Abstract and 1st paragraph].

As for claim 15, MAGEE et al. discloses fatty acids with two unsaturated bonds and three unsaturated bonds and 20 carbon atoms [see e.g. Table 3 C20:2 and C20:3]. MAGEE et al. does not explicitly disclose the location of the unsaturated bonds on the 20 carbon chain fatty acids. Since the fatty acids taught by MAGEE et al. are produced in tall oil as are the fatty acids the instant application it is the examiners position that the C20 fatty acids of MAGEE et al. would include at least some fatty acids with the bond location of 5,11,14-C20-3 and 11,14-C20:2. Please see MPEP 2112.01.

As for claim 16, MAGEE et al. discloses tall oil fatty acids, tall oil rosin, and other distillation cuts [see e.g. Abstract and 1st paragraph].

2. Claims 10, 11, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Composition of American Distilled Tall Oils* by MAGEE et al. as applied to claims 1-9 and 13-16 above, in view of *Tall Oil Fatty acids and Relative Substances* by Pine Chemical Association, or PCA.

As for claim 10, PCA teaches monomer fatty acids [see e.g. pg. 10 Table 4] that contain less than 1% saponifiable material. Monomer fatty acids are produced as side products from the dimerization reaction (*fatty acids comprise the monomer part produced during dimerization of fatty acids* [see e.g. pg. 10]). At the time of the invention it would have been prima facie obvious to combine the distilled tall oils of MAGEE and the dimmer produced fatty acids of PCA. A person of ordinary skill in the art would expect that both could be used for surfactants [see e.g. PCA pg. 11 B] as both compositions contain fatty acids. PCA additionally states that fatty monomer acids have some of the same characteristics of tall oil fatty acids [pg. 10 paragraph 1]

As for claims 11 and 12, PCA discloses 12% oleic acid which examiner has taken to be 'about 19% oleic acid' and further discloses 28% branched C18 acids. The instant claim discloses between 27% and 31% branched C18 acids with approximately 50% being from branched oleic and 50% being branched stearic acid [13%-16% branched oleic plus 14 to 16% branched stearic]. It is the examiner's position that since the prior art contains the same amount of branched fatty acids as the instant claims and that the fatty acids are produced in the same way as by-products of dimerization that the prior art would obviously contain about 50% branched stearic to branched oleic acids. PCA discloses 54% other fatty acids [pg. 10 table 4] which is about 44% other fatty acids.

As for claim 17, MAGEE et al. teaches that various distilled tall oils which contain fatty acids and rosin acids which are able to remove extractives during pulp production [see e.g. Table 1]. MAGEE et al. does not teach that distilled fatty acids are converted into salts of the fatty acids/rosin acids.

PCA teaches that tall oil fatty acids salts are used as surfactants (also known as soaps) [pg. 3] and discloses the sodium salts of said fatty acids [pg. 5]. PCA further teaches that the soap is made by reacting it with the appropriate base [pg. 5]. Additionally PCA states that a strong base is used [pg. 10] and that the acid are hydrolyzed with OH⁻ [pg. 15]. The use of sodium hydroxide as a base would be obvious to a person of ordinary skill in the art as NaOH is a strong base that contains both the requisite sodium and hydroxide ion. At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert tall oil product fatty acids in fatty acid salts to convert them into surfactants. A person of ordinary skill in the art would be motivated to convert such an acid to make a surfactant.

It is the examiner's position that if a composition is known to exist and contain various components, that it would be well within the skill of a person of ordinary skill in the art to mix said individual components to obtain the final composition. Further, the selection of order of mixing ingredients *prima facie* obvious [see e.g. MPEP 2144.04 (IV) (C) Changes in Sequence of Adding Ingredients]. Therefore mixing two components together, treating them and using them is obvious over starting with the two components pre-mixed absent evidence of unexpected results.

3. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Composition of American Distilled Tall Oils* by MAGEE et al. in view of *Tall Oil Fatty acids and Relative Substances* by Pine Chemical Association, or PCA as applied to claim 17 above, and further in view of U.S. Patent 7,255,873 NAKATA, henceforth referred to as NAKATA.

Tall Oil Fatty acid and Relative Substances does not teach how the fatty acids are made into fatty acid salts other than reacting them with a base. NAKATA teaches a method for making fatty acids into fatty acid salts. It teaches that the fatty acid reaction zone is 80 –200 degrees C [see e.g. column 3 line 18-19] which overlaps with the instant claim of 100 deg C. NAKATA further teaches that the process is continuous [see e.g. abstract]. At the time of invention it would have been obvious to a person of ordinary skill in the art to produce the fatty acid salts of PCA with a method such as NAKATA. A person of ordinary skill in the art would be motivated to use the process of NAKATA on the fatty acid of PCA because NAKATA suggests that the process is useful on multiple fatty acids compositions including those with linoleic and oleic acid both of which are claimed as important acids of the instant invention.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, hereinafter AAPA, in view of *Composition of American Distilled Tall Oils* by MAGEE et al., and if necessary, Handbook for Pulp and Paper Technologists by SMOOK, hereinafter SMOOK.

The AAPA discloses that tall oil is used for deresinating birch wood during a cooking process [specification pg. 2 lines 5-10]. The AAPA does not disclose the composition of the tall oil. MAGEE et al. teaches a distilled tall oil which is a mixture of fatty acids and resin acids

(resin acids are rosin acids) and which have less than 5% unsaponifiables [see e.g. Table 1 Tall oil sample Hxs has 29% fatty acids, 67% Resin acids and 4.1% neutrals which are unsaponifiables]). The mixture of fatty acids and rosin acids falls within the instant claimed range.

At the time of the invention it would have been obvious to add the tall oil of MAGEE to birch wood as described by the AAPA. A person of ordinary skill in the art would expect the tall oil of MAGEE to also help remove extractives. Neither, AAPA or MAGEE disclose the common well known temperatures for cooking wood chips. It is the examiner's position that an additional reference is not necessary for cooking temperature, however, should the applicant be unconvinced, SMOOK discloses the cooking temperature of 170 to 180 degrees C which falls within the instant claimed range. At the time of the invention it would have been obvious to cook the birch chips of the AAPA utilizing the tall oil of MAGEE at a temperature of 170 to 180 degrees C as disclosed by SMOOK. A person of ordinary skill in the art would be motivated to use such a cook temperature to obtain a reasonable cook time of 2-4 hours while not ruining the yield of the pulp [pg. 39 Table 4-4].

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Composition of American Distilled Tall Oils* by MAGEE et al., in view of US 6,084,061 LAWSON et al., hereinafter LAWSON and if necessary, Handbook for Pulp and Paper Technologists by SMOOK, hereinafter SMOOK.

MAGEE et al. teaches a distilled tall oil which is a mixture of fatty acids and resin acids (resin acids are rosin acids) and which have less than 5% unsaponifiables [see e.g. Table 1 Tall

oil sample Hxs has 29% fatty acids, 67% Resin acids and 4.1% neutrals which are unsaponifiables]). The mixture of fatty acids and rosin acids falls within the instant claimed range. MAGEE does not disclose the cooking process by which the tall oil is produced. LAWSON discloses that AQ can be removed from tall oil and recycled back to the pulping process [column 3 lines 40-48]. The tall oil remaining with the AQ is good for pulping as it acts as a surfactant. LAWSON that either crude or *distilled tall oil* can work [column 3 lines 10-27]. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use AQ recycling from tall oil process of LAWSON in the pulping of wood chips which produce the tall oil of MAGEE. A person of ordinary skill in the art would be motivated to do so because AQ improves yield and recycling saves AQ costs. Additionally the recycled tall oil acts as a surfactant.

Neither, LAWSON or MAGEE disclose the common well known temperatures for cooking wood chips. It is the examiner's position that an additional reference is not necessary for cooking temperature, however, should the applicant be unconvinced, SMOOK discloses the cooking temperature of 170 to 180 degrees C which falls within the instant claimed range. At the time of the invention it would have been obvious to cook the birch chips of the AAPA utilizing the tall oil of LAWSON at a temperature of 170 to 180 degrees C as disclosed by SMOOK. A person of ordinary skill in the art would be motivated to use such a cook temperature to obtain a reasonable cook time of 2-4 hours while not ruining the yield of the pulp [pg. 39 Table 4-4].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony J Calandra/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791